

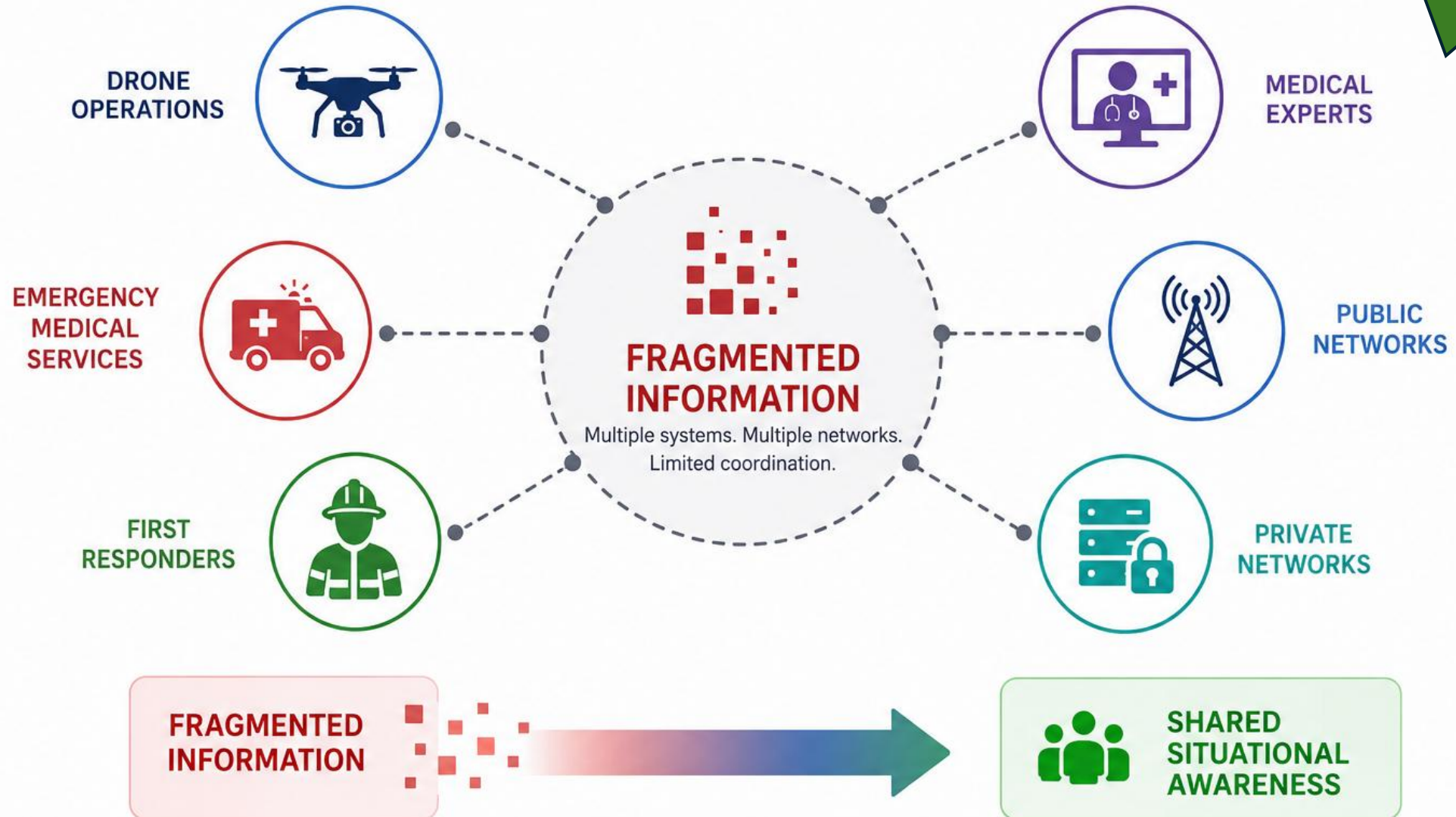
From Connectivity to Operational Decision Support

Enabling Situational Awareness and Patient Prioritisation within CAREWINGS-5G

Dr. Chrisna Ravyse
Medical Director: HealthFOX Ltd.

CAREWINGS-5G

Enhancing Situational Awareness During Emergency Operations



SEARCH & RESCUE SCENARIO

Locate. Assess. Communicate. Act.

1 DRONE DEPLOYED
Area search in real time



2 VICTIM DETECTED & ASSESSED
Live video, vital signs and location

VITAL SIGNS (rPPG)

72	18	98%
b8p	rpm	rpm
SpO ₂		

LOCATION

Lat: 45.4218 Lon: 12.3345

3 COMMAND CENTRE
Unified situational awareness and monitoring



5G
HIGH SPEED • LOW LATENCY
RELIABLE CONNECTIVITY

4 COMMUNICATE
Two-way audio via drone loudspeaker



5 RESPONDERS DISPATCHED
Responders receive live data and navigate to victim



SHARED SITUATIONAL AWARENESS

Everyone sees the same picture in real time



LOCATE

Victim found accurately



ASSESS

Vitals and condition understood



COMMUNICATE

Reassure and guide the victim



ACT

Faster, safer rescue

BETTER OUTCOMES

Every second counts

EMERGENCY RESPONSE USE CASE (MVA)

From Scene Awareness to Patient Prioritisation Before First Responders Arrive

1 DRONE ARRIVES FIRST

Live overview of the MVA scene



- Vehicles**
Amount & positions
- Hazards**
Fire, debris, fuel leaks
- Environment**
Road, weather, visibility
- Bystanders**
Count & density
- Patients**
Detected & estimated

2 SITUATIONAL AWARENESS

Real-time data in Wings Operator Console

Wings Operator Console

MISSIONS Active & Recent
MVA - Highway E18
74°47'07"N, 80°40'03"E
14:32

MAP Mission Layers
MVA Scene

SITUATION & TRIAGE Operational - Medical Indicators

Scene Overview
Patients: 3
Location: 60.4903, 26.5671
Vehicles: 4
Conditions: Daylight / Dry

Hazards & Environment
Road: Blocked
Visibility: Good
Weather: Clear
Traffic: Stopped
Hazards: Fire, Debris

TIMELINE Notes & Events
14:31 Drone arrived on scene
14:32 Live video streaming
14:32 3 patients detected
14:33 Hazards identified

VIDEO Live Streams
Visual Thermal Map
LIVE

PATIENTS (3)

ID	HR	RR	SpO ₂	RISK
P-001	128	24	92%	HIGH
P-002	104	20	96%	MEDIUM
P-003	76	16	98%	LOW

Vitals - Measurement Status
HR
Respiratory Rate (RR)
SpO₂

Unified view of scene, hazards, environment and patients in real time

3 PATIENT PRIORITISATION

Drone directed to individuals
Vital sign assessment

rPPG VITALS ASSESSMENT

- 128 bpm**
Heart Rate
- 24 rpm**
Respiratory Rate
- 92%**
SpO₂

RISK SCORE **HIGH**

AI algorithms prioritise patients before responders are on scene

4 OPERATIONAL GUIDANCE

Targeted information to teams on the way

INFORMATION TO EMS

- Number of patients **3**
- Patient priority order
HIGH **MEDIUM** **LOW**
- Scene hazards Fire, Debris, Fuel leak
- Access routes Recommended approach
- Environmental conditions Clear, Good visibility
- Scene status Traffic stopped, Road blocked

Clear, actionable intelligence for faster, safer response

BEFORE ARRIVAL

SITUATIONAL AWARENESS
Understand the scene as it happens

PATIENT PRIORITISATION
Identify and assess patients remotely

OPERATIONAL READINESS
Equip responders with the right information

BETTER OUTCOMES
Faster decisions. Better care.

MISSION CONTINUITY ACROSS NETWORK ENVIRONMENTS

The Network Changes. The Mission Doesn't.



OBJECTIVE: Ensure uninterrupted situational awareness, patient prioritisation and operational guidance as connectivity transitions between Public and Private 5G networks.



PUBLIC 5G NETWORK

Drone operates on public network



WHAT HAPPENS

- ✓ Live video streaming
- ✓ Vital sign transmission (rPPG)
- ✓ Voice communication
- ✓ Real-time data to dashboard
- ✓ Command & control active

SEAMLESS TRANSITION

Zero impact on operations

HOW IT WORKS



1. DRONE

Captures live video and patient data



2. DATA & VIDEO FEED

Secure, real-time transmission over available network



3. WINGS OPERATOR CONSOLE

Unified situational awareness, patient prioritisation and operational decisions



4. COMMAND & CONTROL

Decisions, guidance and updates to responding teams



PRIVATE 5G NETWORK

Drone seamlessly continues on private network



WHAT STAYS THE SAME

- ✓ Live video streaming
- ✓ Vital sign transmission (rPPG)
- ✓ Voice communication
- ✓ Real-time data to dashboard
- ✓ Command & control active

SEAMLESS TRANSITION

Zero impact on operations

WHAT MUST NOT CHANGE



LIVE VIDEO

Continuous uninterrupted feed



SITUATIONAL AWARENESS

Real-time scene understanding



PATIENT PRIORITISATION

Remote assessment & risk scoring



VOICE COMMUNICATION

Clear two-way communication



OPERATIONAL GUIDANCE

Actionable information to teams



SAFETY & SECURITY

End-to-end encryption and secure transport



THE OPERATOR SHOULD FOCUS ON THE MISSION, NOT THE NETWORK.



THE RESPONDER SHOULD NEVER NEED TO KNOW WHICH NETWORK CARRIES THE DATA.